Dispersal patterns of escaped ornamental woody plants in urban-industrial forest ecosystems of the Ruhrgebiet ?

P. Gausmann, P. Keil, G.H. Loos

The Ruhrgebiet (Northrhine-Westphalia, Germany) is the largest former urban-industrial area in Europe, but still the biggest urban agglomeration, now containing many abandoned areas, most of them former industrial sites (steelworks, coal mining, heaps, industrial railway sites etc.). In most fallow industrial areas primary forests are established. Basic characterizing woody species of these habitats are *Betula pendula* and *Salix caprea*, but the forests also comprising many ergasiophygophytic tree and shrub species, escaped from different kinds of cultivation, especially from ornamental plantings in gardens, parks, cemeteries, public places etc. A certain pattern of occurring of certain species was not recognized by now. Abiotic conditions are a key factor to the occurrences of certain taxa, especially exposure is a main aspect. The taxonomic diversity of the sites is high when the primary forests are of stadiums of primary wood succession. A typical community of these stadiums is dominated by *Buddleja davidii* besides *Betula* and *Salix*. Another group of communities is characterized by anecophytic *Populus* hybrid derivative taxa. When succession proceeds, the number of ergasiophygophyte individual declines, but the number of taxa declines less rapidly. In the coppices of urban forests a lot of escaped taxa survive, some become compartments of the coppices. While many of the ergasiophygophytes are anemochorous and zoochorous, the first settlings in the forests originated from planted individuals in the surroundings. Nowadays many escaped individuals are spreading and at some sites populations are built up – with an increasing tendency. *Cotoneaster divaricatus* seems to become a typical species of urban forests in an progressed succession stage. Also putative idiochorous species, especially *Prunus padus*, becomes a character taxon of older urban forests. Within agglomeration parts of urban-industrial areas, this species is often restricted to older urban forests and planted woods in the surroundings, so a characteristic dispersal pattern is obvious.

Peter Gausmann, Lehrstuhl für Spezielle Botanik, AG Geobotanik Ruhr-Universität Bochum, sphagnumgausmann@web.de